

## ***Calpurnia aurea* ethanol extract reduces *Pseudomonas aeruginosa* quorum sensing- dependent virulence factors**

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*Pseudomonas aeruginosa* is the causative agent of several life-threatening human infections like urinary tract infections, lung infections and skin infections among many. *P. aeruginosa*, like many other pathogens exhibits quorum sensing controlled virulence factors such as biofilm during disease progression, complicating the treatment with conventional antibiotics. Thus, impeding with the pathogen's QS circuit appears as promising new strategy to overcome pseudomonad infections. In the present study, *Calpurnia aurea* ethanol extract, along with other extracts (acetone, ethyl acetate, water) of *Leonotis ocyimifolia* and *Moringa oleifera* were evaluated for anti-quorum sensing/ anti-virulence potential against *Pseudomonas aeruginosa*. *Calpurnia aurea* extracts demonstrated effective antimicrobial activities with MIC value between 1.5-3.5 mg/mL. *Calpurnia aurea* ethanol extracts demonstrated effective anti-QS and anti-virulence (biofilm formation, motility, pyocyanin and pyoverdine production). The quantitative violacein inhibition of *Calpurnia aurea* ethanol extracts showed  $\geq 51\%$  at 1 mg/mL. *P. aeruginosa* was significantly inhibited by  $\geq 50\%$  with same plant extract at 1 mg/mL, whereas observation of dead/live cells with confocal laser microscopy showed a significant reduction of biofilm formation. While extracts altered swimming motility, swarming motility was not significantly altered. Ethanolic *Calpurnia aurea* extracts reduced pseudomonad virulence, albeit in a strain- and extract-specific manner. *Calpurnia aurea* extracts may be suitable for identification of lead compounds with QS inhibitory potential for control of *P. aeruginosa* infections.

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